

Machine translation of JP2000-190541 (Reference 2)

[Claim(s)]

[Claim 1] A label issuing machine printed by three or more colors on a label attached to goods, comprising:

The thermal printing unit in which a thermal coloring label paper which can color in two or more colors is made to color by a thermal head.

A heat-transfer-printing part which transfers a color which differs from said coloring in said thermal coloring label paper with a thermal transfer ribbon.

[Claim 2] A label issuing machine with which said thermal printing unit is arranged rather than said heat-transfer-printing part on a transportation route of said thermal coloring label paper in claim 1 at the upstream.

[Claim 3] A label issuing machine with which said thermal printing unit is arranged rather than said heat-transfer-printing part on a transportation route of said thermal coloring label paper in claim 1 at the downstream.

[Claim 4] A label issuing machine with which said thermal printing unit and said heat-transfer-printing part are sharing a platen, it estranges to a hoop direction of this platen in claim 1, 2, or 3, and a thermal head of the thermal printing unit and a thermal head of a heat-transfer-printing part are arranged.

[Claim 5] A label issuing machine with which said thermal printing unit and a heat-transfer-printing part are sharing a thermal head, and coloring temperature of said thermal coloring label paper differs from hot printing temperature of a thermal transfer ribbon in claim 1.

[Claim 6] A printing format printed to said thermal coloring label paper in either of claims 1-5, In addition to label information, such as the length of a label paper, and a print color, it has a label information memory measure which memorized discernment No. of a ribbon cassette which has stored a thermal transfer ribbon used in combination, A label issuing machine with which ribbon cassette No. read when a label issuing machine is loaded is given to a ribbon cassette.

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the label issuing machine which publishes the label which printed the information (henceforth "merchandise information") about a trade name, a price, a store name, and goods, etc. with the multiple color of three or more colors.

[0002]

[Description of the Prior Art] A mechanism is complicated although there is a multicolor thermal transfer printer with which only the number of colors put the monochromatic thermal transfer ribbon in order as a label issuing machine printed with the multiple color of two or more colors. The quality of frequent occurrence variety entertainments which colors in at least 2 colors according to the height of temperature using the thermal coloring label paper (henceforth "2 color label paper") which it has to a layer part On the other hand, black printing of only merchandise information, There is a multicolor feeling heat printer which performs yellow coloring

of a highlighted region or red printing of merchandise information by one printing.
[0003]

[Problem(s) to be Solved by the Invention]Although this multicolor feeling heat printer is simple for a mechanism, Since the present label paper does not have what appearance can improve printing coloring in coloring of three or more colors, when printing by three or more colors, printing a highlighted region in yellow beforehand, or using together the label issuing machine using a yellow thermal transfer ribbon, and carrying out drawing printing beforehand is performed. However, since it is necessary to prepare 2 color label paper which is not printed in the above-mentioned composition with what printed or printed the highlighted region, management of a label paper is troublesome.

[0004]This invention was made for the purpose of solution of the above technical problems, and an object of this invention is to obtain the label issuing machine which can print three colors by easy operation using 2 color label paper and a thermal transfer ribbon.

[0005]

[Means for Solving the Problem]To achieve the above objects, a label issuing machine of this invention is characterized by comprising the following:

The thermal printing unit which is a label issuing machine printed by three or more colors, and makes a thermal coloring label paper which can color in two or more colors color on a label attached to goods by a thermal head.

A heat-transfer-printing part which transfers a color which differs from said coloring in said thermal coloring label paper with a thermal transfer ribbon.

According to the above-mentioned composition, a label printed by one label issue operation by a total of three or more colors of two or more colors by a thermal coloring label paper and one color by a thermal transfer ribbon is obtained. Here, the label paper can use a common thing, when printing by case where it prints by two or more colors, and one color.

[0006]On a transportation route of said thermal coloring label paper, said thermal printing unit may be arranged to the upstream rather than said heat-transfer-printing part, and may be arranged to the downstream.

[0007]It is good also as composition which said thermal printing unit and said heat-transfer-printing part shared a platen, estranged to a hoop direction of this platen, and has arranged a thermal head of the thermal printing unit, and a thermal head of a heat-transfer-printing part. Since a platen can be managed with one according to the above-mentioned composition, a miniaturization of a label issuing machine is attained.

[0008]Said thermal printing unit and a heat-transfer-printing part can share a thermal head, and it can also have composition which changed coloring temperature of said thermal coloring label paper with hot printing temperature of a thermal transfer ribbon. In this case, mixed colors are avoidable by driving a thermal head so that a coloring position of a thermal coloring label paper and a hot printing position of a thermal transfer ribbon may not lap. Since a thermal head can be managed with one according to the above-mentioned composition, simplification and a miniaturization of structure are attained.

[0009]It adds to label information printed to said thermal coloring label paper, such as the length of a printing format and a label paper, and a print color, It has a label information memory measure which memorized discernment No. of a ribbon cassette which has stored a thermal transfer ribbon combined and used, and ribbon cassette No. read when a label issuing machine is loaded is given to a ribbon cassette. Since discernment No. of a ribbon cassette is added to label information according to the

above-mentioned composition, the No. is seen on a screen and it can load with a right ribbon cassette. Since discernment No. of a ribbon cassette is read and the cassette understands whether it is a right ribbon cassette corresponding to a thermal coloring label paper combined and used when a label issuing machine is loaded with a ribbon cassette, charge of a right ribbon cassette can be checked.

[0010]

[Embodiment of the Invention] Hereafter, the embodiment of this invention is described based on a drawing. Drawing 1 shows the label for a bargain sale printed with the label issuing machine concerning one embodiment of this invention.

[0011] According to the difference in cooking temperature, 2 color label paper which can color selectively in two of black and which yellow, red, and blue colors or more is used for this label issuing machine, and it explains the thing using black and red 2 color label paper 9 by this embodiment. 2 color label paper 9 forms the layer part which forms a printing face, or the whole by black coloring substances and a red color substance.

[0012] Usually, at the time of issue of the label for sale, the surface of 2 color label paper 9 is heated to black coloring temperature, and black printing only of the merchandise information is carried out. At the time of issue of the label for a bargain sale (drawing 1). While printing the portion of 4 d of background face regions of the highlighted region 4 of the upper column in yellow using a yellow thermal transfer ribbon, The merchandise information printed in the message column 4a and the unit price column 4c of the non-highlighted regions 1 and 2 and the highlighted region 4 is heated to black coloring temperature, is black, is printed, is heated to red coloring temperature at the price column 4b of the highlighted region 4 to emphasize most, and prints a price in red.

[0013] Drawing 2 is a block diagram showing the composition of the measuring printer provided with the label issuing machine concerning this embodiment. Drawing 2 is provided with the following.

5 is a metering installation, 6 is a label issuing machine, and it is CPU7.

The printed information input means 8 which comprised a keyboard.

Label information input means 20.

30 is a display.

[0014] The printing format which shows the size of printing, the allotment place of printing, etc. is memorized with the discernment No. by the printing format storage means 10 built in the label issuing machine 6. CPU7 writes the label information shown in drawing 3 inputted from the label information input means 20 in the label information memory measure 21. In addition to format No., label length, a label background color, and label cassette No., cassette No. of the thermal transfer ribbon used for that label is also added to this label information. When the label issuing machine 6 is loaded with the ribbon cassette which stored the label cassette which stored 2 color label paper, and the thermal transfer ribbon, the cassette No. reading means 26 which reads discernment No. given to these cassettes is built in the label issuing machine 6.

[0015] The data of 2 color label paper which adds the stored data of said label information memory measure 21 by the label information input means 20 when using new 2 color label paper or thermal transfer ribbon, and is not used, and a thermal transfer ribbon can be deleted.

[0016] Next, the operation at the time of printing of this embodiment is explained. First, if the items of goods are specified by the display screen of the display 30, while the list A in which the label information shown in drawing 3 is shown will be

displayed on a screen, label cassette No. corresponding to the product is displayed near [B] the list. While an operator chooses label No. on the list A, seeing this and loading the label issuing machine 6 with a label cassette, ribbon cassette No. corresponding to this label cassette is seen, and the label issuing machine 6 is loaded with the ribbon cassette of that No. Since a message to that effect is displayed on a screen when discernment No. of the label cassette and ribbon cassette with which it was loaded is read by the cassette No. reading means 26 and No. is mistaken, it can load with a right cassette certainly.

[0017]CPU7 of drawing 2 controls the printing operation of the label issuing machine 6. From the weight of the goods inputted from the metering installation 5, compute the selling price and Namely, these data, The merchandise information as which the name of article etc. which were inputted from the printed information input means 8 were specified, and the information which carries out highlighting, Based on the label information of drawing 3 linked to said selected label cassette, it develops to the black printed pattern and red printed pattern to 2 color label paper 9, and the black and red printed pattern is written in the printed pattern memory measure 11.

[0018]The printed pattern memorized by the printed pattern memory measure 11 if the printing control means 13 receives a print command from CPU7, Based on the data in which the position and range of the highlighted region 4 memorized by the highlighted region memory measure 12 are shown, heating control of the two thermal heads 15 and 33 of the printer 14 is carried out.

[0019]Drawing 4 is a figure showing the example of 1 composition of the printer 14 of this embodiment, and is provided with the thermal head 15 which prints by heating 2 color label paper 9, and the thermal head 33 which prints to 2 color label paper 9 by hot printing. 16 is the label sheet currently stuck on the pasteboard 37 of tape shape at the interval with constant 2 color label paper 9, and is accommodated in the label cassette 17. That end is inserted among the driving rollers 31 and 31, and this label sheet 16 is sent in the direction of arrow b, pass along between the thermal heads 15 and the platens 32 which constitute the thermal printing unit 41, and subsequently, It passes along between the thermal heads 33 and the platens 34 which constitute the heat-transfer-printing part 42 arranged in the lower stream, direction of the pasteboard 37 is changed on the label stand 36, and the end of 2 color label paper 9 is removed. When the exfoliation sensor 35 detects that the back end of 2 color label paper 9 came to the position, If conveyance of the label sheet 16 and printing operation are suspended and 2 color label paper 9 is removed from the pasteboard 37 by the worker, it will be controlled by the printing control means 13 so that conveyance of the label sheet 16 and printing operation repeat the operation resumed.

[0020]Drawing 5 is a figure showing the composition of both the thermal heads 15 and 33, many heater elements r are allocated on a straight line, and the switch elements Q1-Qn are connected to each heater element r in series, respectively. The printing control means 13 (drawing 2) is considering the detection temperature of temperature sensor S attached to the thermal heads 15 and 33, and carrying out on-off control of each switch elements Q1-Qn, By controlling the resistance welding time t of each heater element r, the cooking temperature of each heater element r is controlled according to a printed pattern.

[0021]As shown in drawing 4, the label sheet 16 which it let out from the label cassette 17 is fed in the direction of arrow b, and heating of one line is simultaneously made in the above-mentioned arrow d direction which agreed in the transverse direction of 2 color label paper 9 by the heater element r located in a line in the direction of arrow d of drawing 5 which intersects perpendicularly with this. The

feeding operation to the direction of arrow b of 2 color label paper 9 is interlocked with, heating per line is performed, and coloring and printing are made by the whole 2 color label paper 9. Thus, while heating the printed pattern of the print columns 4a, 4c, and 4b of the highlighted region 4 of 2 color label paper 9 of drawing 1 to a different temperature from said constant temperature and making it color to the optimal concentration for red, The printed pattern of the portions of the merchandise information viewing area 1 which is a non-highlighted region, and the store viewing area 2 is made to color to the optimal concentration black.

[0022]When drawing 6 is a figure showing the mode of the energization control signal of switch element Q which controls the resistance welding time of the heater element r of the thermal head 15 of drawing 5 and it makes said 2 color label paper 9 color in red, When making switch element Q one, and only tr of drawing 6 makes the current i energize and it makes it color black from the power supply E of drawing 5, it is controlled by the printing control means 13 of drawing 2 so that only the time tb longer than the time tr of drawing 6 makes switch element Q one and energizes the current i from the power supply E of drawing 5.

[0023]The above energization control is printed based on the printed pattern memorized by the data and the printed pattern memory measure 11 of the highlighted region 4 which are memorized by every one-line printing interval t0 at the highlighted region memory measure 12. Continue and 2 color label paper 9 is fed by the thermal head 33 of the heat-transfer-printing part 42, and the position of the platen 34, Drive controlling of the thermal head 33 is carried out by the printing control means 13, and the yellow thin film of the thermal transfer ribbon 19 is transferred as a background color in the black and red print columns 4a and 4b of the highlighted region 4 of the upper row shown in drawing 1, and 4 d of background face regions other than 4c.

[0024]Drawing 7 is a figure showing the composition of the printer concerning a 2nd embodiment of this invention, and drawing 4 and identical codes show identical parts or a considerable portion, respectively. A 2nd embodiment is what replaced arrangement of the thermal printing unit 41 and the heat-transfer-printing part 42, and the thermal printing unit 41 is arranged rather than the heat-transfer-printing part 42 on the transportation route of the label sheet 16 at the downstream.

[0025]In this 2nd embodiment, the yellow thin film which is a background color is first transferred by all the fields of the highlighted region 4 of the label paper 9 of drawing 1 by the heat-transfer-printing part 42, and then the red printing unit 4b and the black print columns 1, 2, 4a, and 4c are printed by the thermal printing unit 41. Since the transferred yellow is a light color, the mixed colors with black and red are not conspicuous.

[0026]Drawing 8 is a figure showing the composition of the printer concerning a 3rd embodiment of this invention, and drawing 4 and identical codes show identical parts or a considerable portion, respectively. In drawing 8, 38 is a platen, it is what was considered as the composition which the thermal printing unit 41 and the heat-transfer-printing part 42 estrange to the hoop direction, are arranged in it, and is sharing the platen 38, and 39 is a guide idler of the label sheet 16. Since the platen 38 can be managed with one while being the same as that of said 1st embodiment and obtaining the printed same label, the miniaturization of a printer of thermal coloring and heat-transfer-printing operation in a 3rd embodiment is attained.

[0027]Drawing 9 is a figure showing the composition of the printer concerning a 4th embodiment of this invention, and drawing 4 and identical codes show identical parts or a considerable portion, respectively. In drawing 9, 40 is a common thermal head which performs thermal printing and heat transfer printing, and constitutes heat

sensitivity / heat-transfer-printing part 43 from this common thermal head 40, platen 34, and ribbon cassette 18.

[0028]Black printing of 4a and 4c in the merchandise information field 1 and the store viewing area 2 which showed drawing 1 the printing operation in a 4th embodiment, and the highlighted region 4, And each element of the thermal head 40 which performs 4-d red printing, Like said 1st embodiment, it is controlled by the resistance welding time of black and red coloring, and each element of the thermal head 40 which performs hot printing to 4 d of areas other than black printing in the highlighted region 4 and the red printing 4a - 4c is simultaneously controlled by the yellow hot printing resistance welding time which is an emphasis color. Thus, the miniaturization of a printer is attained while being able to perform simultaneously black and red thermal printing and desired hot printing of strong mixing colors by controlling the resistance welding time of each element of the common thermal head 40.

[0029]Although said each embodiment showed the example which made other merchandise information color in red in the price of highlighted regions black, and made the highlighted region 4 color in yellow using black and red 2 color label paper 9 and the yellow thermal transfer ribbon 19, the label printed by three colors, such as black, red, and blue, can also be created.

[0030]Although merchandise information printed to a highlighted region was made into the comment and the price after discount in said each embodiment, it may not be restricted to this and they may be a message like "month-long bargain goods", a "figure", an "illustration" in which an origin is shown, etc. Expression which makes it color in meshes of a net or stripe shape besides the thing made to color uniformly, and enclosed the enclosure by the thick black frame further is also possible for a highlighted region.

[0031]

[Effect of the Invention]The thermal printing unit which heats the surface of the thermal coloring label paper which colors in two or more colors according to the height of cooking temperature and in which according to this invention it is made to color, Since it has a heat-transfer-printing part which transfers a color which heats a thermal transfer ribbon and is different from said coloring in said thermal coloring label paper, printing of three or more colors is attained at the thermal coloring label paper which colors in two or more colors. And since the label paper can use a common thing when printing by the case where it prints by two or more colors, and one color, the kind of label paper also decreases and management becomes easy.